



King County

# **ECONOMIC IMPACT OF POTENTIAL FLOODING IN THE GREEN RIVER VALLEY**

**Briefing to the Regional  
Freight Mobility Roundtable**  
Co-sponsors: Puget Sound Regional  
Council & enterpriseSeattle

**Dec. 3, 2010**

**Tom Goodwin PhD, Chief Economist  
Metropolitan King County**

# Briefing outline

- Chronology leading up to the research
- Research – King County (Tom Goodwin) & State Government (Sally Harris)
- Chronology since research



# Chronology leading up to the research

- 1962 - Howard Hansen Dam constructed
- Enabled Kent, Renton, Auburn and Tukwila to develop the Green River Valley basin
  - ▣ Retail, office, manufacturing and distribution
  - ▣ Single and multi-family residential
- January 2009 – a weakness was found in the north abutment of the dam, but not the dam itself
- **USACE announced that a large volume of water may have to be released in a heavy rainstorm, resulting in flooding in the Green River Valley**

# Research agenda

- Assess economic and tax revenue impact of a flood
- Research based on a USACE computer simulated flood scenario
  - 25,000 cfs at the Auburn gauge
  - Assumes all levees hold
  - Does not adjust for mitigation efforts by cities and the County (sandbags, HESCO barriers, etc.)

# Methodology

- King County Global Information System Center (KCGIS) made a geo-coded “shape file” of the simulated inundation area
- Economic, tax revenue and census data overlaid on the shape file



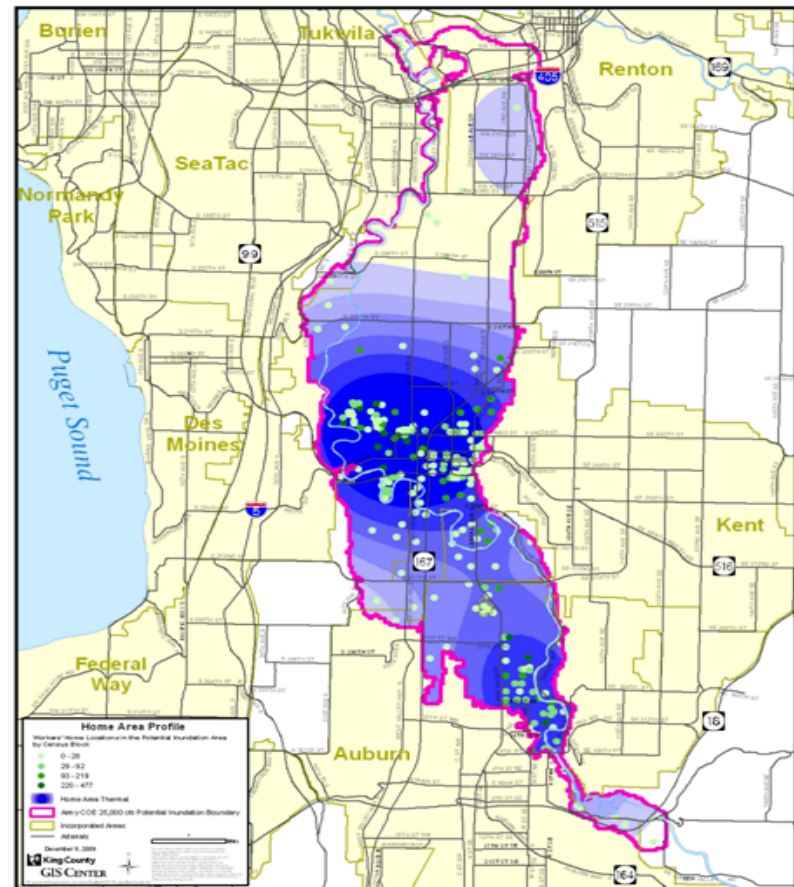
King County

# Simulated inundation area

## CONCENTRATION OF RESIDENCES

All of the area within the pink border would be underwater in a 25,000 cfs event.

Contours and dots show the concentration of residences



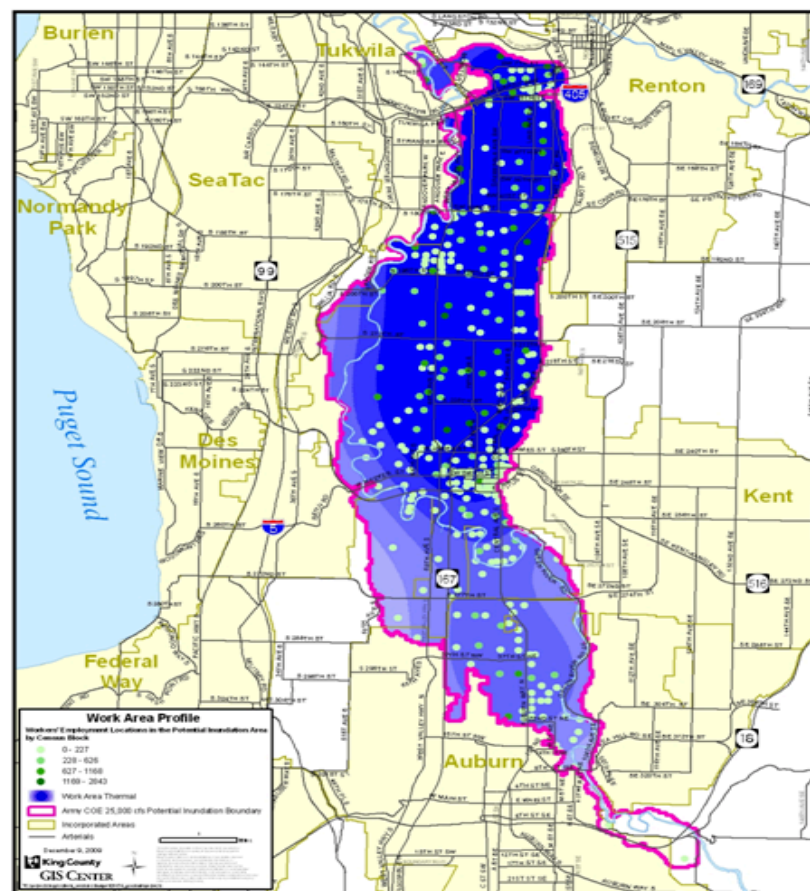
# Employment and Economic Activity

## CONCENTRATION OF EMPLOYMENT

\$63 million per day in total economic output

100,000 jobs

\$16 million per day payroll



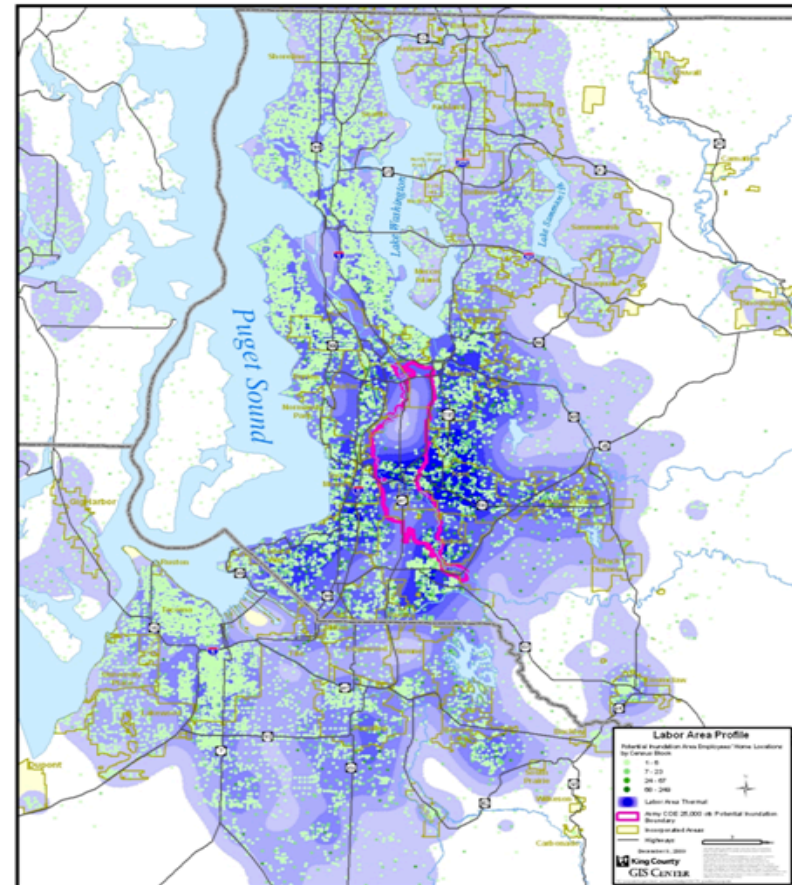


King County

# Commuter patterns - in

**WHERE PEOPLE LIVE WHO  
WORK IN THE FLOOD AREA**

**Most of 100,000 workers live  
outside the area**





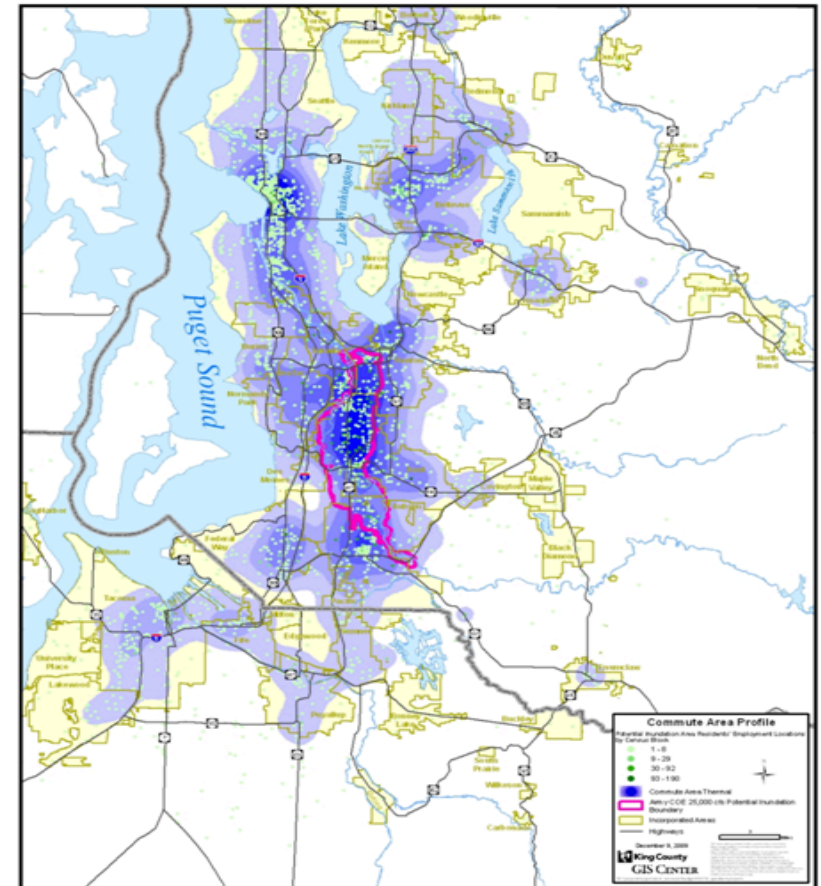


King County

# Commuter patterns - out

## WHERE PEOPLE WORK WHO LIVE IN THE FLOOD AREA

10,000 residents of the  
inundation area commute to  
jobs elsewhere





King County

# Economic hub

- Kent Valley 2<sup>nd</sup> largest industrial park on West Coast; 5<sup>th</sup> largest in nation
- 3<sup>rd</sup> largest distribution & warehouse area in nation
- 122,000 containers of grain shipped through Kent Valley annually
- Seattle & Tacoma are 3<sup>rd</sup> largest container ports in nation



King County

# Aerospace center

- Boeing facilities: defense, space, 737, 747
- 109 supply chain companies serve Boeing, Airbus, Bombardier, etc.
- Designated of national significance by Homeland Security



King County

# Aerospace supply chain

Subsector	# of Firms
Machining	54
Interiors	18
Engineering & Research	16
Composites/advanced materials	11
Tooling	6
Air framer	5
Aircraft systems (pneumatics, hydraulics)	4
Space	3



King County

# Scenario: 10 day flood event

- ❑ 100,000 workers temporarily unemployed
- ❑ Another 138,000 workers impacted throughout the state (State job multiplier of 2.38)
- ❑ 6% of state workforce; 13% of Puget Sound workforce
- ❑ \$1.1 billion in lost output – 12% of Gross State Product



King County

# 10 day flood event: tax revenues

- **\$12.1 million in lost sales tax revenue**
  - **\$8.2 million lost to State**
  - **\$3.9 million lost to local jurisdictions**
- **Uncertain impact on \$100 million Business & Occupancy taxes**
- **No immediate impact on property taxes**



King County

# Damages

- Up to \$4 billion in damage to buildings
- Chehalis-Centralia flood event of December 2007 required \$70 million infrastructure repair
- \$29 million for emergency protective services

# Long term impact of a flood event

- With a permanent solution
  - Partial recovery of sales tax from rebuilding and repair
  - Some lost wages will be made up with overtime
- With no permanent solution in sight
  - No new construction
  - “Lease up and out” exodus from valley
  - Loss of jobs to other states and other countries





King County

# Chronology after research

- ❑ 2010 - Temporary grout curtain installed - dam to operate at half capacity
- ❑ Spring 2010 – Research made a part of Senator Patty Murray’s briefing book
- ❑ July 2010 – Senator Murray announces \$44 million in emergency appropriations to allow the dam to operate at full capacity
- ❑ Work will not be completed until winter 2011-12
- ❑ We still have to get through this winter

Questions?